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Cylinder for the Receptacle of a Printing Form

Patent Claims

1. Cylinder (1) for receptacle of a printing form,
which (1) is rotatable about its principal symmetry axis during a printing operation and which (1) comprises at least one first sleeve (20), which (20) contains carbon fiber reinforced plastic,
characterized in that
the majority of the carbon fibers in the plastic are aligned essentially parallel to the principal symmetry axis of the cylinder (1).

2. Cylinder according to claim 1,
characterized in that
the angular deviation between the principal symmetry axis of the cylinder (1) and the majority of the carbon fibers is less than 10°.

3. Cylinder according to claim 2,
characterized in that
the angular deviation between the principal symmetry axis of the cylinder (1) and the majority of the carbon fibers is less than 5°.

4. Cylinder according to claim 1,
characterized in that
the angular deviation between the principal symmetry axis of the cylinder (1) and the majority of the carbon fibers is less than 2°.

5. Cylinder according to one of the preceding claims,
characterized in that
the first sleeve (20) contains pultroded carbon fiber reinforced plastic.

6. Cylinder according to one of the preceding claims,
characterized in that
devices for absorbing the torsional stress (2, 3, 4), which are so arranged that they absorb at least a part of the torsional stress, which acts on the first sleeve particularly during a change in the speed.

7. Cylinder according to one of the preceding claims,
characterized in that
there is at least one more sleeve (4), which is produced with a different method, and/or an alternative material.

8. Cylinder according to the preceding claim,
characterized in that
the additional sleeve (4) is made of a plastic composite material.

9. Cylinder according to the preceding claim,
characterized in that
plastic composite material of the additional sleeve (4) is a wound or spun CFRP or GFRP.

10. Cylinder according to the preceding claim,
characterized in that
the additional sleeve (4) is made of metal.

11. Cylinder according to one of the preceding claims,
characterized in that
at least one of the first sleeves (20) and the additional sleeves (4) are connected with each other, whereby the external circumferential area of one of the two sleeves (4, 20) and the internal circumferential area of the other sleeve (4, 20) are connected.

12. Cylinder according to claim 10,
characterized in that
the connection consists a substance capable of adhesion.

13. Cylinder according to one of the preceding claims,
characterized in that
the length of the majority of the carbon fibers in the first sleeve (20) lies in the range between 90 and 100% of the length of the first sleeve (20).

14. Cylinder according to one of the preceding claims,
characterized in that
the length of the majority of the carbon fibers in the fist sleeve (20) lies in a range between 95% and 100% of the length of the first sleeve.

15. Method for production of a cylinder (1) according to one of the preceding claims,
characterized in that
the first sleeve (20) is produced through the pultration method.

16. Method according to one of the preceding claims,
characterized in that
the first sleeve (20) is obtained from a long pipe produced through the pultration method, whereby the length of the first sleeve (20) is defined by sawing or an alternative method of separation.

17. Method according to one of the preceding claims,
characterized in that
an additional sleeve is mounted on the first sleeve (20) or the long pipe, by winding or spinning fibers on the circumferential area of the first sleeve, which fibers are embedded in a plastic matrix.

18. Cylinder according to one of the claims 6 to 17,
characterized in that
the device for absorbing the torsional stress comprises at least one ring.

19. Cylinder according to one of the preceding claims,
characterized in that
at least one ring is arranged within the sleeve 7.

20. Cylinder according to one of the two preceding claims,
characterized in that
at least one of the rings contains carbon fibers, which are aligned along the radial direction of the ring.

21. Cylinder according to one of the three preceding claims,
characterized in that
at least one of the rings contains a metal.

22. Cylinder according to the preceding claim,
characterized in that
at least one of the rings is metal ring, preferably a steel ring.

23. Cylinder according to one of the five preceding claims,
characterized in that
at least one of the rings has a cross sectional area, which deviates from the rectangular form.

24. Cylinder according to the preceding claim,
characterized in that
at least one of the rings has a u-shaped profile.